

Harvard Project Zero: A Personal History
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Rationale: The re-launching of a course focused on Harvard Project Zero served as a stimulus for me to set down the history of Project Zero, with particular attention placed on its early history. And so, on Tuesday, January 29th, 2013, I spoke off-the-cuff on this topic for over an hour. Those remarks were video-recorded and the sound quality is quite good. So, an oral version of much of this history is available for those who'd rather watch and listen. I've provided a written account for three reasons:

- 1) It is lengthier and somewhat more authoritative;
- 2) In the event that I get hit by a bus, it would be useful to have such an account available;
- 3) Prompted by this account, I'd like to invite others to provide their own recollections. (See the list at the end of this essay). Of course, there are at least a score of other persons who would have recollections of the early days, even though they are no longer working at Project Zero.

Note: For the most part, I have not mentioned particular projects (of which there are several dozen) or particular investigators (of which there are also dozens). Many of these are described in the documentation about Project Zero available on the web and in publications about Project Zero or by the investigators themselves (<http://www.pz.harvard.edu/about-project-zero.php>). Had I gone into specific projects, this document would be very lengthy, and likely to be read even less than this one.

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Context: Until the middle 1950s, pre-collegiate education in America was primarily a local affair. But in 1957, the Soviets launched the rocket Sputnik. Democracies are slow to anticipate events but once they happen, these nations are likely to over-react. Fearing that the Soviets were about to conquer the earth, the US federal government launched an expensive and aggressive campaign to upgrade pre-collegiate education. As in the early 21st century, the accent fell very much on science, engineering, and technology (what we now call STEM topics). Many people, including me, were beneficiaries of additional funds for education, particularly in the sciences.

In 1959, as part of the renewed focus on education, psychologist Jerome Bruner convened a distinguished group of scientists, psychologists, and educators at a conference center in Woods Hole, Massachusetts. Already a critic of Skinnerian behaviorism and traditional learning theory, Bruner skewed the invitation list toward thinkers who favored a more constructivist, problem-finding (as well as problem-solving) approach. The conference summary that he published the following year with the Harvard University Press, *The Process of Education*, became, improbably, a best seller. Writing on behalf of the attendees, Bruner laid out an educational approach, rooted in knowledge of cognitive development (à la Jean Piaget and Bärbel Inhelder, who were not yet well known in the US); focusing on the mastery of specific disciplines; and reflecting an optimism that one could engage young people in inquiry, in ways that were fun as well as serious, from an early age. From then on, while continuing his research on human cognition, Bruner became increasingly interested in, and more of a national player in, educational thought and experimentation.

The ‘disciplinary turn’ espoused by Bruner was not restricted to the sciences. In 1965, arts educator Manual Barkan convened a conference at Pennsylvania State University, in which he built explicitly on Bruner’s ideas. Barkan maintained that arts education (often called aesthetic education) was also a discipline and it should be taught and evaluated on that basis. This argument gave rise, decades after the founding of Project Zero, to an explicit approach, funded by the California-based J. Paul Getty Trust, called ‘discipline based arts education’

(DBAE). By a strange twist of fate, work at Project Zero two decades later came to be framed or reframed, in part, as a critique of DBAE.

At the Harvard Graduate School of Education, under the leadership of Dean Francis Keppel, hiring took a turn toward individuals who were expert in scholarly disciplines; primarily social scientific and (through Project Physics) scientific subjects. While he was not primarily on the faculty of education, Bruner's influence was felt across the Cambridge Common. There was also a strong Masters of Arts in Teaching program, which, in a manner that anticipated the founding of Teach for America in the early 1990s, attracted graduates of elite colleges with at least some disciplinary expertise.

In 1962, Francis Keppel went to Washington as U.S. Commissioner of Education. In his youth, Keppel had been a sculptor and in Washington he helped to create an arts and humanities initiative. Later, he became chairman of Lincoln Center in New York. His successor as HGSE Dean, Theodore (Ted Sizer), was the son of a Professor of Art History at Yale University, and had considerable interest in the arts. Among his many initiatives as Dean, Sizer brought to the school well-known speakers on ethics and morality, like Bruno Bettelheim and Konrad Lorenz, and in a flagship appointment, hired Lawrence Kohlberg, at the time the leading scholar of moral development in the world. Sizer also attracted teachers with an artistic interest, like Barbara Leondar, a literary scholar. In reflecting on the Sizer era at HGSE (1964-1972), I've quipped that he wanted to balance a focus on 'the truth,' with attention to 'the good,' and 'the beautiful.'

Events Surrounding the Beginning of Project Zero: Shortly after the Woods Hole Conference, with his colleague in psychology George Miller, Jerome Bruner launched the Harvard Center for Cognitive Studies. It soon became a unique venue. Outstanding scholars from a variety of disciplines, and from much of the Western world, came to Cambridge for a year or more of research and discussion as part of what we now call 'the cognitive turn' in psychology. As it happens, in the early 1960s, three scholars did residencies at the Center: Paul Kolars, an

ingenious experimental psychologist with interests both in visual perception and language; Nelson Goodman, a well known and well-respected philosopher (with a focus on epistemology), en route from the University of Pennsylvania to Brandeis University; and Noam Chomsky, already the leading iconoclastic theorist of linguistics and psychology, though not yet a well known public intellectual. As it happens, Chomsky had been an early student of Goodman's and Goodman had nominated him to the high distinction of membership (as a Junior Fellow) in the Harvard Society of Fellows. But by the early 1960s, Chomsky and Goodman were already in deep disagreement about epistemological issues and their one time warm friendship had frayed.

Moving away from a pure focus on psychological research, and inspired by Project Physics, in which several of his friends were engaged, Bruner initiated a major curriculum effort for the middle grades of school. Called "Man: A Course of Study" it presented key ideas from psychology, linguistics, anthropology, and other social- scientific disciplines in ways that were intellectually respectable and yet could be grasped by ten year olds. By a series of coincidences, that I will save for an autobiographical account, I went to work for Bruner on this curriculum in the summer of 1965, literally weeks after I graduated from Harvard College. Working that summer for Bruner in educational research and development was arguably the most intense and most informative chapter of my intellectual development. One account of my experience appears in Chapter 2 of my 1989 book *To Open Minds*.

Meanwhile, Dean Sizer was reflecting on how the arts and arts education might become more central in a graduate school of education. I am still piecing together the exact sequence of events that led to the founding and the funding of Project Zero. From literary scholar Peter Brooks, and Ted's widow, Nancy, I learned that Ted's sister in Connecticut lived on the same block as Ernest (Ernie) Brooks, a New York lawyer who had become the president of a foundation called The Old Dominion Foundation. Peter is Ernie's surviving son. In 1969, the Old Dominion Foundation, along with another philanthropy called The Avalon Foundation, merged into the much larger and (eventually) much better known Andrew W. Mellon

Foundation. Sizer turned to Brooks for support of various initiatives at HGSE, including a new initiative in the area of arts education.

Meanwhile, Nelson Goodman, who had moved from Philadelphia to the Boston area, in part because of a promise that he could be in effect a curator of the Rose Art Museum at Brandeis University, had already become disaffected with Brandeis. He hoped to move back to his undergraduate and graduate alma mater, Harvard, and join the faculty of the distinguished Department of Philosophy. There is reason to believe that the Philosophy Department was party to this desire and sought to accomplish it within a few years, though the archives on this matter are sealed for eight decades! Anyway, Dean Sizer spoke to Professor Israel Scheffler, a member of both the Faculty of Education and the Department of Philosophy in the Faculty of Arts and Sciences, and they agreed that Goodman would be a viable leader of such an initiative. And so, assuming that a position could be funded, Goodman would move at least temporarily to the Graduate School of Education. This was not the first time, and perhaps not the last, that HGSE was used as a temporary holding place, a kind of academic bull-pen, for potential members of the FAS.

After a year in London (1965-1966), I returned to Harvard as a graduate student in developmental psychology. At the start of my second semester (Spring 1967) Sheldon White, one of my professors, mentioned in passing that a professor at Brandeis, Nelson Goodman, was looking for research assistants for a project in the arts. I had already been struck by the paucity, in developmental psychology, of any interest in artistic (as compared to scientific) development; and, accordingly, I had already undertaken a study of creativity in the arts and sciences. And so, in another of these episodes that can transform one's life, I drove out to Waltham to meet Nelson Goodman.

On Nelson Goodman: While he was already one of the most esteemed philosophers in the English speaking world, "Nelson Goodman" was scarcely a household name. Though much younger than Goodman, Noam Chomsky and Jerome Bruner were already much better

known among the chattering classes. I had heard about Goodman from Ken Freed, an older friend who dabbled in philosophy, but had not read any of Goodman's works. Nor, in this pre-search engine era, would it have been easy to get 'the scoop' on Professor Goodman.

I don't have much of a visual memory, but I do remember visiting Goodman who occupied a capacious office in or near the Rose Art Museum and who had access to impressive works of art (whether they were his, or borrowed from the museum, I do not know). We exchanged pleasantries and he then asked me if I had read any philosophy. I was then poring over the writings of the French phenomenologist Maurice Merleau-Ponty and reported that immersion with some enthusiasm. Goodman groaned audibly. Chastened, I then remembered that, as a freshman in College, I had read and was much influenced by the American philosopher Susanne Langer. Langer had also been the teacher of Judy Krieger, whom I had married just before beginning graduate school. In a distinct change of mood, Goodman commented, "Well, that's another matter." In fact, in his important work on symbols systems, Goodman had explicitly mentioned Langer, and her own teacher Ernst Cassirer; and so I had now moved to philosophical grounds on which he was far more comfortable. We ended our meeting when Goodman indicated that he was likely to be starting a research project at the Harvard Graduate School of Education and, either then or shortly thereafter (and there was no email!), he invited me to join the project.

Many others (as well as I) have written accounts of Nelson Goodman, as both philosopher and person, and so I am limiting myself to remarks that help to elucidate Goodman's role as the founding director of Project Zero. Goodman was raised in the Boston area (he had a strong Boston accent) and went to Harvard College, class of 1928. Though Goodman did not describe himself as Jewish, he was clearly considered to be a Jew, and he attended college at a time when there was a definite quota for Jewish students. Goodman's father had started an art gallery in the Boston area, and from an early age, Goodman had a joint love of philosophy (and mathematics) on the one hand, and the arts, particularly the visual arts, on the other. And indeed, in the 13 years between receipt of his undergraduate degree (1928) and receipt

of his doctorate in philosophy (1941), Goodman ran his father's art gallery, said to be the first gallery in Boston to display the works of the once-controversial Pablo Picasso.

It's worth a digression about Harvard in Goodman's time. In highly conservative Boston, undergraduates at the College were instrumental in ushering in an awareness of various forms of modernism in the arts. Among the undergraduates at Goodman's time were composer Elliott Carter, writer James Agee, impresario Lincoln Kirsten, collector Edward Warburg, and future head of the Museum of Modern Art Alfred Barr. Perhaps not surprisingly, they founded a Society of Contemporary Art. As a student of Paul Sachs, the head of the Fogg Art Museum (and part of the family that had founded the investment company Goldman Sachs), Goodman was undoubtedly aware of and influenced by his classmates; but it is not clear how actively he was involved in the Harvard arts scene on the eve of the great depression.

In the 1930s, 1940s, and 1950s, working in tandem with his longtime friend and colleague W.V.O. Quine, Goodman turned out a steady stream of important papers in the area of epistemology. In very general terms, he was interested in the same problems of the nature of knowledge that had engaged Cassirer and Langer, but he approached these issues wielding the lens of analytic philosophy, closer to mathematics and logic than to humanistic studies.

At the same time, however, Goodman never relinquished his vocational interest in the arts. He was married to Katherine Sturgis Goodman, a painter of some renown in New England. He collected works of art in a variety of styles and genres, and regularly attended art fairs. He may also have continued to buy and sell art; I don't know about that. And in the 1960s, he directed his philosophical wits much more directly than before on the nature of artistic knowledge and practice. The John Locke lectures given at Oxford in 1962 transmogrified into a monograph *Languages of Art*, considered in the Anglo- American world to be one of the chief contributions to aesthetics in the last half century. (For some years, at Project Zero, we referred to this book as "the Bible"), With little doubt, this rekindled professional commitment to the arts catalyzed Goodman's desire to head a project focused on artistic

knowledge and artistic education. Indeed, this immersion was foretold in the closing pages of *Languages of Art* (p. 265, 1968).

Once the arts and sciences are seen to involve working with—inventing, applying, reading, transforming, manipulating—symbol systems that agree and differ in certain specific ways, we can perhaps undertake pointed psychological investigation of how the pertinent skills inhibit or enhance one another; and the outcome might well call for changes in educational technology. Our preliminary study suggests, for example, that some processes requisite for a science are less akin to each other than to some requisite for an art. But let us forego foregone conclusions. Firm and usable results are as far off as badly needed; and the time has come in this field for the false truism and the plangent platitude to give way to the elementary experiment and the hesitant hypothesis.

Not a bad preamble for Project Zero and a fair sample of Goodman's pointed literary style.

Goodman was a challenging personality. On the surface he was gruff, sardonic, and not averse to putting people down. He was a fierce debater and a tough taskmaster. I never forget that when I began to show him my writings he said, "The first time that I run into a sentence that is not clear, or that I don't understand, I stop reading." This injunction has remained with me for half a century. He could be stingy, allowing others to pick up the tab, though he had no hesitancy in spending many thousands of dollars on a work of art. Put bluntly, many students and some colleagues did not like Goodman, and he returned the compliment.

But I did like Goodman and by and large we hit it off very well. I think that he served as one of a small number of 'intellectual fathers' to me. Bruner was probably father-in-chief. I, in turn, served as somewhat of an intellectual son to him. Because I was not a budding philosopher, he was somewhat more forgiving of my lack of a steel-trap mind. I once noticed how, even on a ceremonial occasion, he was determined to match wits with his illustrious

colleagues, Van Quine and Hilary Putnam. I also enjoyed his wit, and we were able, over the years, to tease one another. Goodman was a tireless worker and while he taught me a lot about delegating, he did not neglect his students, nor his obligations as a head of a research project. And above all, his devotion to the arts was clear. At a time when the death of John F. Kennedy was still vivid in people's minds, Goodman regularly quipped, "Ask not what the arts can do for you; ask what you can do for the arts."

Speaking of quips, that may explain why we got the name Project Zero. While I did not come from the world of Projects, Goodman, as a former military man, thought easily in terms of finite projects. He also did not like to raise expectations! And so, rather than picking a descriptive name (like Research on Arts Education and Practice, which could be shortened to REAP), he picked a name which communicated nothing, and promised nothing. Asked to explain the name, Goodman would say, "Well, there's lots of lore about arts education but the general communicable knowledge about arts education is zero." Goodman would go on to explain that many practitioners of arts education knew what they were doing and seemed to do it effectively. But it was not easy to share such knowledge-in-practice with others, nor to know which practices could lead to general principles. So in effect, Goodman concluded "we are starting from zero."

Project Zero at its Inception: In the fall of 1967, Project Zero was launched (without the slightest fanfare) at the Harvard Graduate School of Education. The word 'at' means notionally a part of the school budget; but we never had a permanent home, and were moved regularly, sometimes as often as once a year and often without any advance notice. I don't remember all of the locations, but they included a building on the current location of the Gutman Library; a building on the current location of the Longfellow parking lot; a dreary set of rooms at Shannon Hall, then the home of ROTC; a ground floor apartment on Prescott Street, and so it goes. Indeed, as part-time inhabitants of a school in which arts education was hardly central ('invisible' would be closer to the truth), our housing received a Very Low Priority. Which allows me to cite an anecdote:

Then as now, it was not easy to get furnishings from the School. At one time, we were in the possession of an extremely ratty rug; falling apart, malodorous, an eyesore. For months we tried to get it replaced. The bureaucrat to whom we pled for a replacement had a Dickensian Name, Ron Wormser (you can't make these things up—rug, worn, worm). After the nth futile attempt to get a new rug, founding Project Zero member Paul Kolars asked, “Nelson, does this test your faith in human nature?” To which Nelson immediately retorted, “No, Paul, it confirms it.”

Over the next four years (1967-1971) Project Zero functioned as a loosely knit think tank. At any one time, there were about a dozen persons associated with the project. A few were Professors: Israel Scheffler occasionally attended meetings; Paul Kolars was a Professor of Psychology at MIT, and David Perkins' mentor in psychology. Some were young faculty: Barbara Leondar in English education, John Kennedy in the psychology of perception, Vernon Howard in philosophy; several were graduate students - Dave Perkins in artificial intelligence; Geoffrey Hellman in philosophy; Diana Korzenik in the psychology of art, I in developmental psychology; a few were primarily staff. For example, Frank Dent, with a background in the ministry and in arts administration

What did we do? We met regularly, sometimes as often as once a week ('promptly', said Nelson and he meant it!), to discuss issues that cut across the disciplines and across the arts; for example, the meaning and nature of style, metaphor, rhythm, expression and other key concepts than spanned some or even all of the arts. Most of these were issues of interest to Goodman, ones that he had raised and probed, at least initially, in *Languages of Art*. We carried out small scale experiments; for example, David Perkins probed which visual cues enable us to perceive cubic corners, I examined the development in young children of sensitivity to artistic styles. Focusing more explicitly on education in the arts, we called in experts, those knowledgeable about education of young children, education at arts academies

and museums, education in high school, and made occasional site visits to highly regarded venues of education in the arts.

A few other activities remain vividly in my mind. We invited notable scholars to speak to us and nearly all of them accepted. Snaring leading thinkers without an honorarium or an honor was far easier to do in the late 1960s than in the early 21st century. One visit was particularly bloody. I had befriended Rudolf Arnheim, probably the leading psychologist of art in the world, and invited him to Project Zero to speak about his work. Unbeknownst to me, both Nelson Goodman and Paul Kolars were severe critics of Gestalt Psychology, the approach to psychology exemplified by Arnheim. They were also fierce debaters. Their aim was to unmask what they regarded as Arnheim's superficial arguments and sloppy use of terminology and, by their own lights, they were successful in doing so.

But it is not clear who had the last word. Arnheim wrote a vicious review of *Languages of Art* which appeared prominently in *Science* magazine. Goodman responded in kind. Neither had a good word to say about the other, and both lived for many years thereafter (Goodman died at 92 in 1998; Arnheim at 103 in 2007). But several of us were able to navigate between these two giants, with their ample egos. Indeed, I was privileged not only to get to know both of them quite well, but also through my membership in Project Zero to befriend the British art historian Ernst Gombrich (closer to Goodman) and to have some interchanges with the American psychologist James Gibson (closer to Arnheim).

Another encounter was far more upbeat and far more consequential for me. Early in 1969, both Goodman and I became interested in newly reported research on the division of labor between the two cerebral hemispheres (what we'd now called "Right Brain" and "Left Brain" thinking). Goodman's interest centered on the means by which different kinds of symbol systems are encoded and decoded; my interest was in how artists manage to orchestrate the many activities and skills that go into the creation and perception of works of art.

We decided to invite as a speaker Norman Geschwind, a well known neurologist, with special interest in higher cortical functions. Starting in the early afternoon, Geschwind gave a mesmerizing talk on the sequelae to different kinds of brain imaging. For example, he spoke about what happened to composer Maurice Ravel and to painter Lovis Corinth, after they had suffered injuries to the brain. I had to go home for dinner but the discussion continued until well into nighttime. By the end of that day I had begun to rethink my future course of study. Instead of pursuing a teaching job in psychology, I would attempt to secure support for postdoctoral work with Geschwind at the local neurological unit that specialized in the study and rehabilitation of stroke victims. I'd rank the catalytic evening with Geschwind and the fifteen years of study and collaboration that followed, as equally important in my scholarly development to my already-described involvements with psychology mentor, Jerome Bruner, and philosophy mentor, Nelson Goodman. Indeed, I had the privilege of dedicating books to each of these three remarkable scholar-mentors.

Aside: The first phase of my scholarly career involved study of the development in children, and the breakdown in adults, of various kinds of human symbol-using capacities. A focus was on symbolic activities in the arts, but never exclusively in the arts. And this work led, in turn, to the development of the theory of multiple intelligences, the work for which I remain best known, 30 years after it was first published. I don't want to credit or blame my mentors for this work. Indeed, while Geschwind and Bruner were sympathetic to "MI theory," Goodman looked askance at it, "the theory of multiple stupidities," he called it. But I think it can be succinctly summarized as an effort to look empirically at the symbol using skills that Goodman discerned from a philosophical or analytic perspective; my lenses, so to speak, were the study of artistic development in children, a la Piaget and Bruner, and the study of the breakdown of symbol using skills in adults, a la Norman Geschwind.

As far as I can remember I was not heavily involved in the securing of funding for Project Zero during its early phases. The Harvard archives chronicle a set of correspondences between Ted Sizer at GSE, and Ernie Brooks at the Old Dominion Foundation. Sizer never received as much money as he asked for, but there was support sufficient to provide a modest

base for HPZ. I used to quip that Perkins and I were unpaid assistants, a tradition that we have maintained until the present. Nonetheless, I was amused to discover that our unpaid ('volunteer,' was the politically correct predecessor to 'intern') status was enshrined in the Brooks-Sizer correspondence. Toward the end of Goodman's tenure as founding director, there were also modest funds from the U.S. Office of Education.

The other activity for which Project Zero was notable during the early years was perhaps insufficiently acknowledged and heralded. Goodman believed passionately that artistic forms of knowledge were every bit as important, precious, and challenging as knowledge in the sciences and in other realms. In this respect, he was a faithful follower of epistemologists Langer and Cassirer. He also believed, probably correctly, that most students at the Graduate School of Education (and, indeed, at the University more broadly) had little understanding of artistic practice.

And so, with little fanfare, and a willingness to do most of the heavy lifting himself (neither Perkins nor I were much interested in being impresarios), Nelson launched a memorable series of 12 lecture performances at the Graduate School of Education. In each, a well known artist invited the audience, which was often quite large, "behind the scenes," so that members could understand the deep and complex thinking that went into quality artistic production and performance. And the series was deliberately broad: I.A. Richards (by then a University Professor of Literature and clearly the most distinguished member ever of the GSE faculty) on poetry; Ladji Camara on drumming; Jacques LeCoq on mime; Ina Hahn and Martha Gray Armstrong on dance; George Hamlin and others on the directing of a play (with Christopher Reeve, then a high school or college student as one of the actors); Alfred Guzzetti on photography; Leon Kirchner on composing. This kind of activity, had it been undertaken at Lincoln Center, might have had a total budget of millions, but Goodman curated them on a shoestring, and those who attended (including me) were much affected and educated. It was Nelson Goodman at his best!

For extra credit, with his friend Thomas Crooks, Nelson was also the catalyst for the launching of a number of initiatives in the Harvard Summer School. He helped to create a Dance Center in the Harvard Summer School, directed by Ina Hahn. He also pushed for a course on Business Administration in the Arts. The architects were Thomas Raymond and Stephen Greyser, both from the Harvard Business School. The challenges of arts administration, which we now take for granted, were on Nelson's mind well before they had become part of the public landscape.

Nelson and I also participated in the course on arts administration, by writing up a 'case'—business school style. It concerned the vexed question (at the time) of whether art museums should charge admission. Nelson had in mind an ongoing discussion at the Boston Museum of Fine Arts. The board chair at the time was named Seybolt and, always primed for a caprice, Nelson created the pseudonym "Nuttall." Nuts and bolts, get it??

Last but not least, I should mention some 'products' (we now use the deadly term 'deliverables') of the first years of Project Zero. At the time we had a Project Zero course on the books. Since most of the researchers were not faculty members, this course was given by individuals who occupied that role. I believe that both Barbara Leondar from Education and John Kennedy from Psychology, were empowered to give those courses. I don't have reading lists or syllabi from those courses, but I suspect that they covered topics that were reviewed in three publications.

The first and most relevant was the final report of the first phase of Project Zero, co-authored by Goodman, Perkins, Vernon Howard, and myself. It provided a synoptic view of the various activities undertaken during the four years of the Goodman era, and is an essential document for any future historians. The second is a book, published some years later, and edited by Perkins and Barbara Leondar, called *The Arts and Cognition*. Contributors were other 'principals' of Project Zero, and, like the 'final report,' this volume provide an excellent (and somewhat less technical) survey of the topics and conclusions reached during the first

phase. Finally, there is a scholarly paper coauthored by David Perkins, Vernon Howard, and me, called, “Symbol Systems: A Philosophical, Psychological and Educational Investigation.”

Leadership Transition: By 1971, Goodman was well entrenched in the Department of Philosophy. A tough bargainer, he not only got a prime capacious office in Emerson Hall, overlooking Harvard Yard, but, invoking two heart attacks that he had suffered in the 1950s, prime parking behind Widener Library. I think that he felt that HPZ had been successfully launched, and he was no longer that interested in the empirical and practical details of artistic education. And so, characteristically and epigrammatically, he said to David Perkins and me, “You can have the project...” Which, as he then pointed out with glee, meant that from then on we had to raise the money.

For a year, while I was beginning postdoctoral studies with Geschwind and others at the Boston Veterans Administration Medical Center, David was the sole director of Project Zero. In 1972, I joined him as co-director and, for the next 28 years (until 2000), we remained at the helm of the organization. With the exception of the Spencer funded “teaching for understanding” initiative, David and I did not work closely together on any projects. But we kept each other informed about our activities, applied together for funds for Project Zero, shared a secretary, and when appropriate worked together on writing or speaking projects. At various times we also hosted seminars or brown bag lunches, at which visitors or members of Project Zero spoke. While we tried to ignite these discussions from time-to-time, they never worked as effectively, or for as long, as the Goodman led weekly sessions of the late 1960s. I have various hypotheses about why this may have been the case.

The Psychology Decade: Any division of the 40-plus year period from 1972 to the present would be to some extent arbitrary. It seems fair to say that both Perkins and I remained interested in conceptual and analytic issues, but neither of us saw ourselves primarily as philosophers and our contributions to the philosophical literature, if any, were incidental, not

focal. During the decade after Goodman's resignation, David and I both operated primarily as psychologists, directing small research groups. At some point in that decade, we initiated an informal division of labor. David headed the "cognitive skills" group, which focused on cognitive processes involved in creativity, in artistic perception and production as well as other realms of thinking. I headed the 'developmental' group. My group focused on the development, in normal and gifted children, of various forms of artistic and symbolic competences; and, to a lesser extent, on their breakdown under various forms of pathology.

With the support from the Old Dominion Foundation (which had morphed into the Mellon Foundation) at an end, David and I were expected to hone our own entrepreneurial skills. Sometimes, we applied together to the government for research support. We had a fan at the National Science Foundation (named Henry Odbert) and a friend at the National Institute of Education (named Martin Engel) and they provided sufficient support in the 1970s to keep us afloat. That a research project in the arts could be funded by NSF seems incredible from today's perspective—how times have changed!

The 1970s saw the first of several 'crises' at Project Zero. In 1972, Sizer resigned the Deanship at Harvard and became the head of Phillips Academy at Andover. His place was taken by Paul Ylvisaker, who had not previously been an academic (and, unknown to us, was already quite ill). Ylvisaker also inherited one of the periodic financial crises at HGSE. He did not see the point of having a research project in the arts, not least one headed by two young researchers without faculty appointments. And so he moved to shut us down. We were saved by two persons. One was Professor Israel Scheffler who, while never an active member of Project Zero, was loyal to Goodman and saw us as a positive force at the School of Education. In effect, he said to Dean Ylvisaker, "These are bright guys who are bringing overhead to the school. Why thwart them...just leave them alone." The second was the Dean's own sister, Barbara Y. Newsome, who worked in the arts for one of the Rockefeller philanthropies. Paul sent Barbara some information about our project and while she did not give us a ringing endorsement, she was enthusiastic enough that she contributed, if unwittingly, to our survival.

You might see this decade as a time when both Perkins and I were building up our resumes as researchers in psychology, broadly construed. If we taught at all, it was quite incidental. We neither duplicated Goodman's work in philosophy, nor did we pick up his educational slant, as in the lecture performances. And I began to work with a number of promising young researchers, including Dennie Wolf, Laurie Meringoff (who met her husband, noted children's book author Marc Brown, while conducting research on children's understanding of media) and Ellen Winner, who worked with me on metaphoric thinking and whom I married in 1982. In 1981, drawing on quite original 'process tracing studies' of artists at work, David published his influential book *The Mind's Best Work*.

Comments: It is worth noting that while David and I never collaborated on books, the subjects in which we became interested often paralleled one another – and this was probably not a coincidence. We both had long time interests in the topic of creativity across the arts and sciences. We both devised original, iconoclastic theories in the area of intelligence. We both studied and wrote about leadership, with interests both in individual leaders and in the direction of organizations. We had a continuing interest in artistic perception, production, and education. And as we grew older, we became interested in ethical and moral issues; my group looking at 'good work,' David and colleagues focusing on peace studies.

I should also note that, while a focus on education in the arts remained, Dave and I both branched out from that focus. Dave, for example, did work in standard visual perception, in everyday reasoning, and in creativity across the spectrum. I was looking at the development and breakdown of the full range of cognitive capacities, not just those in the arts. Nearly everyone who came to work at Project Zero had some background in the arts and I think one can discern an 'artistic touch' and an 'artistic attitude' even in work that is not explicitly concerned with the arts.

The Move to Educational Reform: Just as the launching of Sputnik in 1957 catalyzed a crisis in American educational policy, the publication in 1983 of the federal report *A Nation at Risk* galvanized reflections on the condition of K-12 education in the United States. It also generated more of a federal role in government, more funding from foundations, as well as more active attempts to affect curriculum, pedagogy, and assessment at the national level. It is not possible to say whether Project Zero would have moved increasingly into educational reform—particularly K-12 education—had it not been for the issuing of this influential report. But in any event, in the 1980s and thereafter, Project Zero became far more involved in educational theorizing, and educational practice. Again, our two groups worked in tandem rather than closely together, but both were far more involved in schools, far more involved with teachers, far more involved in curriculum and assessment, than had been the case in earlier years.

This period ushered in the one sustained collaboration between David's and my team of researchers. At the urging of Lawrence Cremin, influential President of the Spencer Foundation, and with the collaboration of Vito Perrone, then a newly hired faculty member of HGSE, we began a lengthy examination of what we came to call "Teaching for Understanding." Partly conceptual, partly involving action research in select schools, we sought to refashion what it means to understand concepts, topics, and disciplines, and to conceptualize 'understanding as a performance.' Not only did this undertaking provide a very rich vein for exploration; but in recent decades, it has become the best known educational product of Project Zero.

I used to quip that when Ronald Reagan became president (in 1981), our funding from the government ended; and that is because Reagan thought that social science was socialism (he had said as much). Whether or not this remark is literally true, it is the case that nearly all of our funding in the past three decades has come from other sources; either foundations or wealthy individuals. Tina Grotzer's work in science education, begun initially with David Perkins, is the one major exception to this generalization. And so, again working mostly in tandem, David and I began to learn about what it takes to secure support from the MacArthur

Foundation, the McDonnell Foundation, and many other national philanthropic organizations that are, or were, interested in education and/or the social sciences.

I've long said that Project Zero carries out projects that fulfill two requirements: 1) The projects are of interest to the researcher(s), and 2) the researchers can secure money to execute it. If you look at the lengthy list of projects undertaken from 1980 to the present (closer to 100 projects than to 25), you can certainly see a connection between the funder's interest and what work we carried out. But we never responded to contracts (and rarely to so-called RFPs) and we did not bend our work simply to please a funder. This characteristic places us in a very small category of research enterprises.

A Fateful Car Ride: In the late 1980s, I attended a conference on educational reform at a hotel on Memorial Drive in Cambridge. I don't remember the content of the conference and I can confidently state that the conference itself was not very memorable.

Except for one thing: After the end of the conference, an attendee who had been notably quiet during the conference asked if he could hitch a ride with me from the venue to Harvard Square. I replied in the affirmative. On the way to the hotel, Ray Handlan told me that he was interested in our work and might be able to help with funding. Having tried to raise money for almost half a century, I can assure you that this is a message seldom heard by the petitioners!

It turned out that Ray represented a Foundation that was unknown to the public, so secretive indeed that I did not learn its name for some time. Called the Atlantic Philanthropies, the organization funded work in many areas, including education, did so generously, with the only proviso that its identity would be kept secret. And for close to a decade, its beneficiaries maintained the aura of secrecy, until the name "Atlantic Philanthropies" and the funder "Charles Feeney" was revealed in a front page story in The New York Times.

Since I wanted to make sure that I was not accepting laundered funds, I checked with the powers-that-be at Harvard and was assured that the Atlantic Philanthropies was a valid non-profit and that it was perfectly appropriate to accept its support. My group was faithful to the directive of the foundation; so much so that we referred to Ray Handlan as “Rex Harrison;” our program officer Angela Covert as “Agatha Christie” and the foundation itself as AF (for “anonymous funder”). Many other beneficiaries were much less compliant, though I don’t know that anyone was ever penalized by a withdrawal of funding.

While we continued to secure some funding from other sources, Project Zero was fundamentally transformed by the support from the Atlantic Philanthropies

The Nineties: Going national and international: In the mid-1980s, having spent most of my adult life at Project Zero, and now beginning a teaching career at HGSE, I went to Tom James, the founding President of the Spencer Foundation, and asked for his advice about Project Zero. He responded, in matter-of-fact fashion, “Either go international or give it a decent burial.” On my own I would not have followed either strand of advice.

But the funding from the Atlantic Philanthropies, which lasted a solid decade, and often yielded one million dollars a year, fundamentally altered our organization. It both enhanced our organizational capacity and laid the groundwork for long-term stability.

For the first time, we were in a position to assemble a genuine secretariat. Before that time, David and I either shared a secretary or worked with one or more student assistants. Thereafter, we were able to hire individuals who were in charge of finance, human resources, technology, publications, and other “core needs” of an organization, whose ranks swelled from roughly 15-20 individuals to more like 50-60. Without question, the extra support allowed us to focus much more on the research itself.

Of course, a large organization does not run itself, even when you are in a position to hire various kinds of experts. And so, during the 1990s, we experimented with different variations of governance. David and I remained in our title roles, but we experimented with various kinds of managers and management teams. None of them was disastrous, but none of them worked seamlessly either (nor should we have expected them to). And so David and I began to think about the issue of succession of leadership of the organization.

The second major change of Project Zero was the challenge of making our work, and particularly our work in education, better known, both nationally and internationally. For the most part, the Atlantic Philanthropies was admirably hands-off, in the treatment of its funded organizations. Our valued program officers did not tell us what to study or how to study it. And yet our program officer made it clear to us that it did not suffice to ‘carry out research for research’s sake.’

This directive caused one of the few genuine crises in the history of Project Zero. As the major contact to the Foundation, one privy to its thinking, I recommended that we initiate a summer institute, where we could present our ideas and practices to a large group of educators. To my surprise, this suggestion led to almost unanimous opposition. To this day I don’t quite understand the nature or the vehemence of the opposition; which suggests to me that it stemmed from many causes, ranging from resentment at the power that I was exhibiting in a famously flat organization to a feeling that each of us should be able to do whatever we want, no matter what the funder (or anyone else) requests.

At any rate I became so frustrated that I finally announced “if you all won’t join me in mounting this Institute, I’ll simply do it myself.” For some reasons, this “line in the sand” calmed people down and in the end almost everyone cooperated in carrying out a summer institute. It took us a few years to iron out various wrinkles but quite soon our Institutes were highly successful. We now carry out 2-3 institutes each year in the United States; they are

our major source of income for the ‘core’ staff of the organization; and we are holding our first International Conference in London in the fall of 2013.

Comment: It would be misleading to claim that the ideas and practices of Project Zero would win a plebiscite anywhere. We might like to think that is because our ideas are too subtle, and perhaps too sophisticated, for many educators and parents, and that our ideas are destined to cede hegemony to more simplistic ways to think about learning and teaching. Whatever the reason, I think that in almost any jurisdiction, there would be a portion of members who resonate to Project Zero ideas. And rather than trying to convert the resisters, we are better off trying to help those individuals and institutions, often ‘early adapters,’ who already have some sympathy with our aims and our methods.

At various times we have created maps of where our ideas have taken root. In the United States, our ideas are best known and most admired on the coasts, and in a few inland cities like Chicago. Interestingly, the first two Multiple Intelligences Schools in the world are in the heartland: the Key Learning Community in Indianapolis and the New City School in St. Louis. But if anything, our ideas have greater following outside the United States; in particular, in parts of Latin America, in Scandinavia, in Australia and New Zealand, and, surprisingly, in pockets of China and India. Of course, the latter two countries are so populous that they cannot readily be compared to Colombia or to Denmark.

Beyond 2000 - New Governance, New Opportunities, New Challenges: In 2000, David and I turned over the reins of Project Zero to Steve Seidel, a long time researcher with Project Zero and soon to become head of the Arts in Education program at the school. We put together a small Steering Committee, composed of the three of us, with various managers in attendance on an ad hoc basis. Shari Tishman soon joined the Steering Committee, and in 2008, we had a smooth transition from Steve’s to Shari’s leadership. More recently, the Steering Committee has been joined by Carrie James and Daniel Wilson who are in effect directors-in-training.

Unfortunately, the first of two financial crises occurred shortly after Steve took over the reins. An insecure and ill advised leadership at Harvard, which gave little latitude to HGSE, put all sorts of pressure on Project Zero and other centers, making it difficult for us to proceed with our work and sometimes even to go for funding. Commitments by the School to continue the funding originally provided by Atlantic Philanthropies were simply ignored. And the second financial crisis, that of 2008, put pressure on every corner of the campus.

After ‘regime change’ at the University and at HGSE, conditions became better. Not only did members of Project Zero become much more actively involved in teaching, at any one time, several members of the teaching faculty had been involved with Project Zero; and many more students were involved in our work, several dozen at one point. But the leadership at the School tried in various ways to be helpful to Project Zero. We were even featured in an installation that described important milestones in the history of the School. We hope these trends will continue.

As I write, in the middle of 2013, we are well into several long term projects and have recently initiated exciting new ones. A new cohort of students and researchers is on the scene. It is easy to see that Project Zero could soon be celebrating its 50th anniversary and, just possibly, its best days may lie ahead.

Final Thought - The ‘Symptoms’ of Project Zero: According to Nelson Goodman, when trying to specify what makes a work or an experience ‘artistic,’ it does not make sense to set up a single, rigid definition. Rather, one should think of certain characteristics which, when all are present, suggest that we are in the realm of the arts; and when are all absent, signal that we are not involved in the arts.

Over the years, as Ellen Winner has pointed out, attempts to create a short and sharp ‘mission statement’ for Project Zero have never succeeded. Project Zero is too loose a confederation of researchers and practitioners, and it is too much subject to the whims of national priorities and funding preferences, to lend itself to a simple formulation as might be case for the Center for Cryogenics or the Center for Population Growth. In that sense, our ‘zero’ is both a benefit and a curse.

That said, on the basis of what’s been proposed in this report, I’m willing to stick my neck out and delineate the symptoms, loosely grouped, that have characterized our endeavors over the decades:

- Focus on high end cognition (e.g. problem solving and problem finding, not the identification of the alphabet or the ability to discriminate colors)
- Search for conceptual clarity; create frameworks that can be applied flexibly (these have been the subject of Institutes and, more recently, of the Project Zero Course, reinstated in 2013)
- Rarely tied to specific age groups or specific disciplines; inherently multi-disciplinary
- Draw on artistic thinking and analyses, without being limited to the arts
- Having resonance with educators, particularly those of a progressive frame-of- mind
- Develop ideas and give them a push in the right direction (we don’t run schools or museums, but give helpful input to many all around the world)
- Open to collaboration to many individuals and organizations, but insist on quality partnerships
- Avoidance of a party line—one is free to study what one wants and no one legislates the findings or their interpretations
- Carry out succinct projects (sometimes caricatured as project-itis) and make sure that they are well documented)

- Require a champion who is willing to take the lead in securing the funding and leading the project
- Prefer support that is open-ended rather than tied to contracts and to ‘deliverables’

Acknowledgements:

I'd like to thank the following people, who commented on an earlier draft of this history. I welcome additions, reflections, and corrections. You can send them to me at howard_gardner@harvard.edu. At some point I may lengthen the history or create a wiki.

Jeanne Bamberger Veronica Boix-Mansilla Peter Brooks

Laurie Meringoff Brown Angela Covert

Jessica Davis

Martha Gray Armstrong Geoffrey Hellman

John M. Kennedy Diana Korzenik David Perkins Arthur Powell Israel Scheffler Nancy Sizer
Ellen Winner

Recibido: 07/01/2016